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Distribution and Population Constitution of Drosophila in South East Asia and Oceania

II. Drosophilidae in the Suburbs of Kuala Lumpur, West Malaysia[1)]

By

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(With 105 Text-figures and 1 Table)

Many specimens of drosophilid flies were collected by net sweeping and exporsing fermenting banana baits from one of tropical rain forests Ulu Gombak, near Kuala Lumpur, West Malaysia, from July 1 to 4, and from December 16 to 18, 1972.

They represent 56 species belonging to the Drosophilidae with 12 genera, excepting the *Zygothrica* and the *Scaptodrosophila* which are still examined, and one species of the allied family, Diastatidae. Most of them are new to West Malaysia including 29 new species and one unknown speices as shown in Table 1. All of the descriptions are based on a study of dry specimens (pin flies) and alcoholized specimens. All type specimens are deposited at the Biological Laboratory, Sapporo University.

The authors wish to express their sincere thanks to Professor A. Retnasabapathy, Faculty of Medicine, University of Malaya; Dr. W.H. Cheong and Dr. K. Inder Singh, Institute for Medical Research, Kuala Lumpur, Malaysia, for giving many facilities and advices for the present study.

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2) Department of General Education, Sapporo University.

Table 1. List of species collected at Ulu Gombak, West Malaysia (*, new species; ○, new to West Malaysia)

Family DIASTATIDAE	
Genus *Campichaeta*	
Campichaeta aurascutellata Takada & Momma	*
Family DROSOPHILIDAE	
Subfamily Steganinae	
Genus *Stegana*	
Subgenus *Parastegana*	
Stegana grandipalpis Takada & Momma	*
Genus *Amiota*	
Subgenus *Phortica*	
Amiota gombakana Takada & Momma	*
Genus *Leucophenga*	
Leucophenga tenuipalpis Takada & Momma	*
Leucophenga gibbosa (de Meijere)	○
Leucophenga quadripunctata (de Meijere)	○
Leucophenga guttiventris (de Meijere)	○
Leucophenga nigripalpis Duda	○
Subfamily Drosophilinae	
Genus *Dettopsomia*	
Dettopsomyia equscauda Takada & Momma	*
Dettopsomyia preciosa (de Meijere)	○
Genus *Microdrosophila*	
Microdrosophila bullata Takada & Momma	*
Genus *Mycodrosophila*	
Mycodrosophila nigropleurata Takada & Momma	*
Mycodrosophila amabilis (de Meijere)	○
Genus *Hypselothyrea*	
Hypselothyrea pseudoguttata Takada & Momma	*
Hypselothyrea paraguttata Takada & Momma	*
Genus *Nesiodrosophila*	
Nesiodrosophila species *a*	○
Genus *Lissocephala*	
Lissocephala asiatica Okada	○
Lissocephala parasitatica Takada & Momma	*
Lissocephala indersinghi Takada & Momma	*
Lissocephala neoasitatica Takada & Momma	*
Lissocephala corpusculata Takada & Momma	*
Genus *Liodrosophila*	
Liodrosophila crassipeda Takada & Momma	*
Liodrosophila pugnicoxa Takada & Momma	*
Liodrosophila marginifrons Duda	
Liodrosophila minicosta Takada & Momma	*
Liodrosophila trichaetopennis Takada & Momma	*
Liodrosophila parabimaculata Takada & Momma	*
Liodrosophila malleopyga Takada & Momma	*
Liodrosophila nigrogibberata Takada & Momma	*

Genus *Scaptomyza*	
Scaptomyza spiculipennis Takada & Momma	*
Genus *Drosophila*	
Subgenus *Hirtodrosophila*	
Drosophila longialata Takada & Momma	*
Drosophila longicorpata Takada & Momma	*
Drosophila longicrinita Duda	o
Subgenus *Sophophora*	
melanogaster group	
takahashii subgroup	
Drosophila retnasabapathyi Takada & Momma	*
montium subgroup	
Drosophila artecarina Takada & Momma	*
Drosophila vulcana Graber	
Drosophila barbarae Bock & Wheeler	
Drosophila parvula Bock & Wheeler	
Drosophila baimaii Bock & Wheeler	
suzukii subgroup	
Drosophila mimetica Bock & Wheeler	
ananassae subgroup	
Drosophila malerkotliana Parshed & Paika	
Drosophila bipectinata Duda	o
Drosophila pseudoananassae Bock	
ficusphila subgroup	
Drosophila ficusphila Kikkawa & Peng	o
eugracilis subgroup	
Drosophila eugracilis Bock & Wheeler	o
denticulata subgroup	
Drosophila pseudodenticulata Takada & Momma	*
"questionable" subgroup	
Drosophila micropectinata Takada & Momma	*
Subgenus *Drosophila*	
Drosophila polychaeta Patterson & Wheeler	o
immigrans group	
quadrilineata subgroup	
Drosophila tetravittata Takada & Momma	*
Drosophila circumdata Duda	o
Drosophila nigrilineata Angus	o
Drosophila quadrilineata (de Meijere)	o
Drosophila annulipes Euda	o
nastua subgroup	
Drosophila sulfurigaster Duda	
lineosa subgroup	
Drosophila argentostriata Bock	o
Drosophila silvistriata Bock & Baimai	o
"questionable" subgroup	
Drosophila cheongi Takada & Momma	*

Family DIASTATIDAE

Genus ***Campichaeta*** Macquart

Campichaeta Macquart, 1833, Histoire naturella Insect. (Diptéres) 2: 547. Type-species: *Diastata obscuripennis* Meigen, 1830: 97.

Campichacta aurascutellata Takada & Momma **n. sp.**

(Text-figs. 1–4)

Male. Body about 3.0 mm, wings about 3.0 mm in length. Head as broad as thorax. Arista with bout 10 branches above, 6 below, besides a small terminal fork. Antennae coffee brown, third joint elongate. Palpi black, slender, with a long apical seta. Ocellar triangle matt black. Periorbit golden yellow, narrow and 2/3 as long as front; front greyish brown. Face golden yellow. Carina flat and yellow. Cheeks narrow, yellowish white. Orbital bristles long situated equal distant from eye margin, and bristles in the ratio 2:1:2; posetrior reclinate rather thicker than the other two. Vibrissa fine.

Mesonotoum coffee brown, pollinose. Scutellum tannish yellow. Only one prominent humeral bristle; prescutellars long; acrostichal haris 4–6 irregular rows; dorsocentrals three pairs. Anterior scutellars divergent and posterior ones parallel. Middle sternopleurals prominent. Halters yellowish white at apically.

Legs yellowish brown, femora darker at apically, tibiae and tarsi darker. Preapicals well developed on all three tibiae; apical bristles strong on middle tibia. Abdominal tergites black; 7th tergite yellow.

Wings fucous, broad, with scattered large black patches, apical margin clear; wing tip slightly pointed (Fig. 4). Costal-index about 3.5; 4V-index about 6.3; 4C-index about 2.7; 5x-index about 1.0; Ac-index about 0.9; C3 fringe on basal 2/3.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratype, one male, collected together with holotype.

Distribution: West Malaysia.

Family DROSOPHILIDAE

Subfamily Steganinae

Genus ***Stegaga*** Meigen

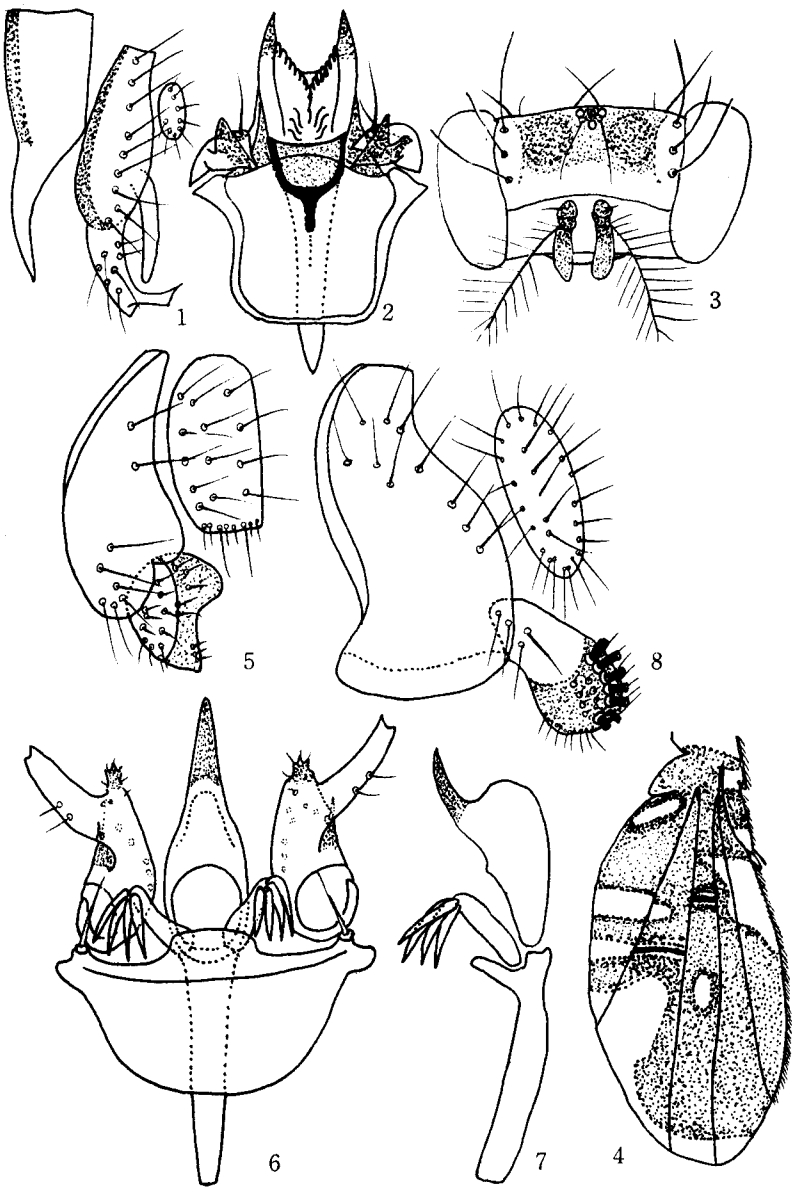
Subgenus ***Parastegana*** Okada

Parastegana Okada, 1971, Mushi, 45, 5: 91.
Type-species: *Stegana femorata* Duda, 1923:33 (Taiwan)

Stegana grandipalpis Takada & Momma, **n. sp.**

(Text-figs. 5–7)

Male. Body about 3.0 mm, wings about 2.5 mm in length. Arista with 9



Figs. 1–4, *Campichaeta aurascutellata* n. sp. 1, periphallic organs; 2, phallic organs; 3, head; 4, wing. Figs. 5–7, *Stegana grandipalpis* n. sp. 5, periphallic organs; 6, phallic organs, ventral aspect; 7, phallic organs, lateral aspect. Fig. 8, *Amiota gonbakana* n. sp., periphallic organs.

branches above, one below, besides a large fork. Third segment of antennae dark brown and slender. Orbital bristles in the ratio 4:3:5. Palpi large, hemispherical, with several dorsal setae. Humeral bristle only one. Vibrissa stout and long, succeeding orals fine.

Mesonotum and scutellum dark brown, somewhat glossy. Acrostichal hairs in about 10 irregular rows: anterior dorsocentrals apparently absent. Halters white at tip. Legs yellow. femora and tibiae coffee brown, fore metatarsus with about 5 stout black spines on the posterior surface, basally. Abdominal tergites dark brown.

Wings hyaline with large black patches on costal cell, alula, edge of marginal cell, tip of submarginal cell, middle of the 4th longitudinal vein, 5th longitudinal vein and from costal vein to M3-4 along posterior cross vein, vertically; C-index about 2.0; 4V-index about 3.6; 4C-index about 1.8; 5x-index about 0.9; Ac-index about 18.0; C3 fringe on basal 4/5. Third costal section with about 4 thorn-like warts.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Relationship: Closely allied to *Stegana* (Parastegana) *fleximediata* Takada, Momma & Shima, 1973, but differ from the latter in having different features of phallic organs and patches of wings, also differ from the shape of palpus.

Genus ***Amiota*** Loew

Subgenus ***Phortica*** Schiner

Phortica Schiner, 1862, Wien. Ent. Monat., 6: 433.
Type-species: *Drosophila variegata* Fallén, 1823.

Amiota gombakana Takada & Momma, **n. sp.**

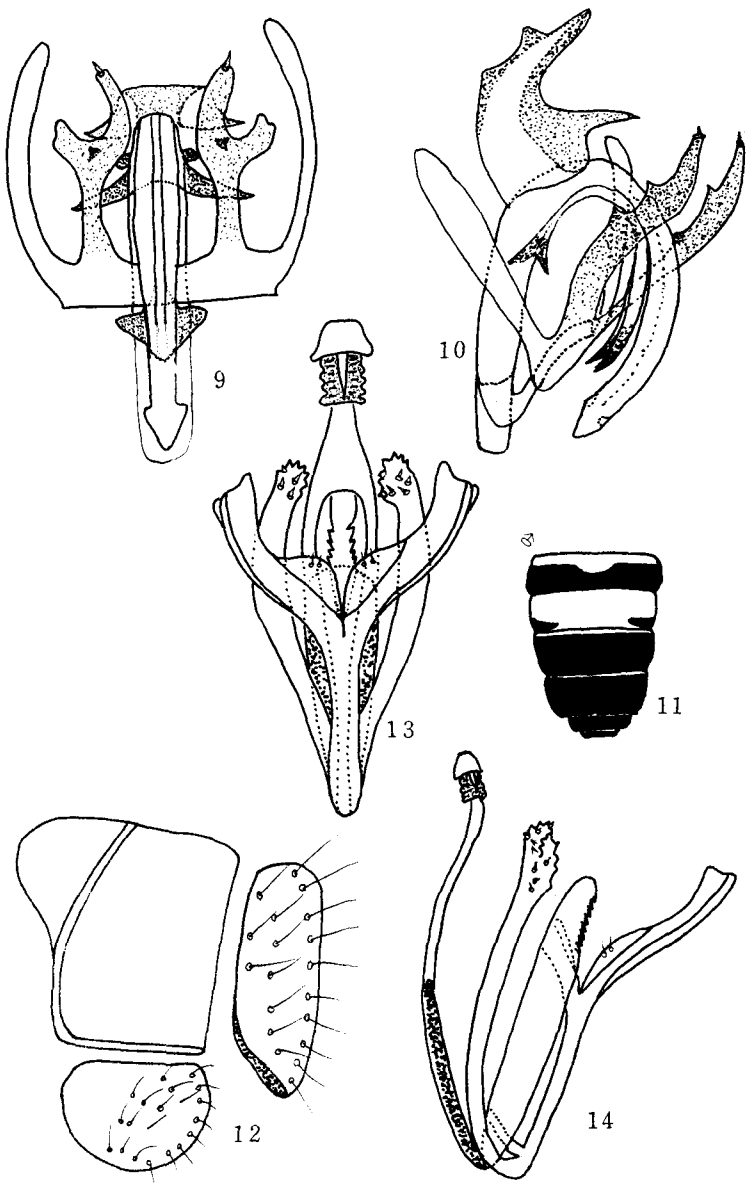
(Text-figs. 8–10)

Male. Body about 3.0 mm in length, greyish tan with several dark patches. Arista with 4 branches above, one below, besides a terminal fork. Palpi yellow with a apical seta. Front greyish tan, somewhat grey pollinose. Cheeks broad and yellowish grey, about 1/6 the greatest diameter of the eye. Orbital bristles in the ratio 9:5:8.

Mesonotum and scutellum with irregular grey pollinose patches. Acrostichal hairs in 8–10 rows; a pair of prescutellars present. Scutellum convexed. Legs yellow, tibiae with two dark annuli.

Wings hyaline; few minute wart-like bristles on the distal half of third costal section; C-index about 2.5; 4V-index about 2.4; 4C-index about 1.4; Ac-index about 3.5.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 4, 1972



Figs. 9–10, *Amiota gombakana* n. sp., 9, phallic organs, ventral aspect; 10, phallic organs, lateral aspect. Figs. 11–14, *Leucophenga tenuipalpis* n. sp. 11, abdomen of male; 12, periphallic organs; 13, phallic organs, ventral aspect; 14, phallic organs, lateral aspect.

(Takada).

Distribution: West Malaysia.

Genus ***Leucophenga*** Mik

Leucophenga Mik, 1886, Wien. Ent. Zeit., 5: 317.
Type-species: *Drosophila maculata* Dufour, 1839 (Europe).

Leucophenga tenuipalpis Takada & Momma, **n. sp.**

(Text-figs. 11–14)

Male. Body 3.3 mm, wings 2.8 mm in length. Arista with 7 branches above, 3 below, besides a terminal fork. Third segment of antennae large, much darker. Orbital bristles in the ratio 2:3:5. Front dark brown. Palpi slender and blackish brown, with few ventral setae.

Mesonotum reddish brown; acrostichal hairs in 12 rows, a pair of prescutellars present; anterior dorsocentrals short, near posterior ones. Anterior scutellars divergent, posteriors convergent; scutellum pale at tip. Thoracic pleura dark brown, with a longitudinal dull stripe. Legs yellow, middle and hind femora brown at apically. Sterno-index about 0.6. Abdominal tergites mostly black; 1T yellow, 3T medially yellow with lateral small black patches. Halters brown at tip.

Wings fuscous, marginal cell dark; C-index about 2.4; 4V-index about 1.2; 4C-index about 0.9; 5x-index about 0.8; Ac-index about 1.6; C3 fringe on basal 7/10.

Holotype, male in alcoholized Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Paratypes, 2 males in alcoholized collected together with holotype.

Distribution: West Malaysia.

Leucophenga gibbosa (de Meijere)

Drosophila gibbosa de Meijere, 1908, Tijdschr. Ent. 51: 105.
Leucophenga gibbosa (de Meijere), Duda, 1924, Archiv Natur. 90A (3): 184 (Java).

Female. Body 3.5 mm, Wings 3.3 mm in length. Arista with 7 branches above, 3 below, besides a terminal fork. Front orange brown, somewhat velvety. Ocellar triangle grey, ocellus yellow. Orbital bristles in the ratio 10:10:13. Vibrissal rows well developed, second 3/4 of first. Palpi pale brown with.. several stout setae.

Mesonotum dark brown, glossy; acrostichal hairs in 12 irregular rows; two long prescutellars present. Ratio anterior and posterior dorsocentrals 0.4. Anterior scutellars divergent and posteriors parallel. Halters yellow. Thoracic pleura yellow with a diagonal brown stripe from propleura to the base of halter. Sterno-index about 0.6. Legs yellow. Abdominal tergites yellow, with dull dark brown

bands on 2T to 7T, midapically pale on each tergites.

Wings dusky, especially marginal and submarginal cells; C-index about 3.2; 4V-index about 2.0; 4C-index about 0.8; 5x-index about 1.5; Ac-index about 4.0; C3 fringe on basal 4/5. Costal distal apine only one, stout.

Specimen examined, female, Gombak, near Kuala Lumpur, July 3, 1972 (Takada).

Distribution: Java and West Malaysia (new record).

Leucophenga quadripunctata (de Meijere)

Drosophila quadripunctata de Meijere, 1908, Tijdschr. Ent. 51: 105.
Leucophenga quadripunctata de (Meijere), Duda, 1924, Archiv Natur. 90, A(3): 184 (Java).

Female. Body 3.3 mm, wings 3.0 mm in length. Arista with 8 branches above, 3 below, besides a terminal fork. Front orange yellow, glossy. Ocellar triangle grey, convex; ocellus ruby. Orbital bristles in the ratio 3:3:7. Vibrissa stout and black. Palpi pale brown with few ventral setae.

Mesonotum tannish brown; scutellum dark brown, apically white. Acrostichal hairs more than 10 irregular rows; prescutellars present. Anterior and posterior scutellars parallel. Ratio anterior and posterior dorsocentrals 0.3. Thoracic pleura and legs yellow. Abdominal tergites yellow, with apical ripple black bands from 2T to 5T, 6T with three rounded black patches.

Wings transparent, with a costal distal black spine; four blackish brown spots on costal cell to first basal cell, tip of marginal cell, areas of anterior and posterior cross veins; C-index about 1.5; 4V-index about 3.0; 4C-index about 2.4; 5x-index about 0.8; Ac-index about 4.0; C3 fringe on basal 11/12.

Specimen examined, female, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Java and West Malaysia (new record).

Leucophenga guttiventris (de Meijere)

Drosophila guttiventris de Meijere, 1911, Tijd. v. Ent. 54: 414
Leucophenga guttiventris (de Meijere), Sturtevant, 1921, Publ. Carneigie Inst. 301: 131.
Type-locality: Java.

Specimen examined, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Nepal, Java, Formosa, Japan, Fiji, Africa and West Malaysia (new record).

Leucophenga nigripalpis Duda

Leucophenga nigripalipis Duda, 1924, Arch. Naturgesch. 90, A (3): 188 (Formosa).

Specimens examined, 2 males and one female, Gombak, near Kuala Lumpur,

West Malaysia, July 3, 1972 (Takada).

Distribution: Nepal, Formosa and West Malaysia (new record).

Subfamily Drosophilinae

Genus ***Dettopsomyia*** Lamb

Dettopsomyia Lamb, 1914, Linn. Soc. London, Trans. 16(4): 350 (Seychelles). Type-species: *Dettopsomyia formosa* Lamb, 1914.

Dettopsomyia equscauda Takada & Momma, **n. sp.**

(Text-figs. 15–17)

Male & female. Body 1.5 mm, wings 1.3 mm in length. Third segment of antennae brown. Arista with 3 branches above, 2 below, besides a terminal fork. orbital bristles placed far forward; anterior reclinate small, beside proclinate, and proclinate about half length of posterior reclinate. Ocelli rather far forward, located in a median brown area, between ocelli and orbits are elongate golden yellowish area. Front flat; cheeks broad, yellow, except along lower border, with few long vibrissae. Palpi brown, with few dorsal setae.

Mesonotum tan, pollinose, with a complex pattern of brown marks; especially prominent is a broad median brown stripe that broadens before scutellum. Anterior dorsocentrals near suture on the protruding brown marks. Acrostichal hairs in 2 rows. Thoracic pleura dark brown. Legs pale with brown bands, usually femora and tibiae with basal and apical bands. Abdominal tergites blackish brown.

Wings hyaline; distal costal incision moderately deep, lappet small, black, and bearing two apical bristles; a narrow brown mark below lappet; C-index about 1.2; 4V-index about 2.7; 4C-index about 2.0; 5x-index about 3.0; Ac-index about 3.0; C3 fringe on basal 1/2.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratype, female in alcoholized, collected together with holotype.

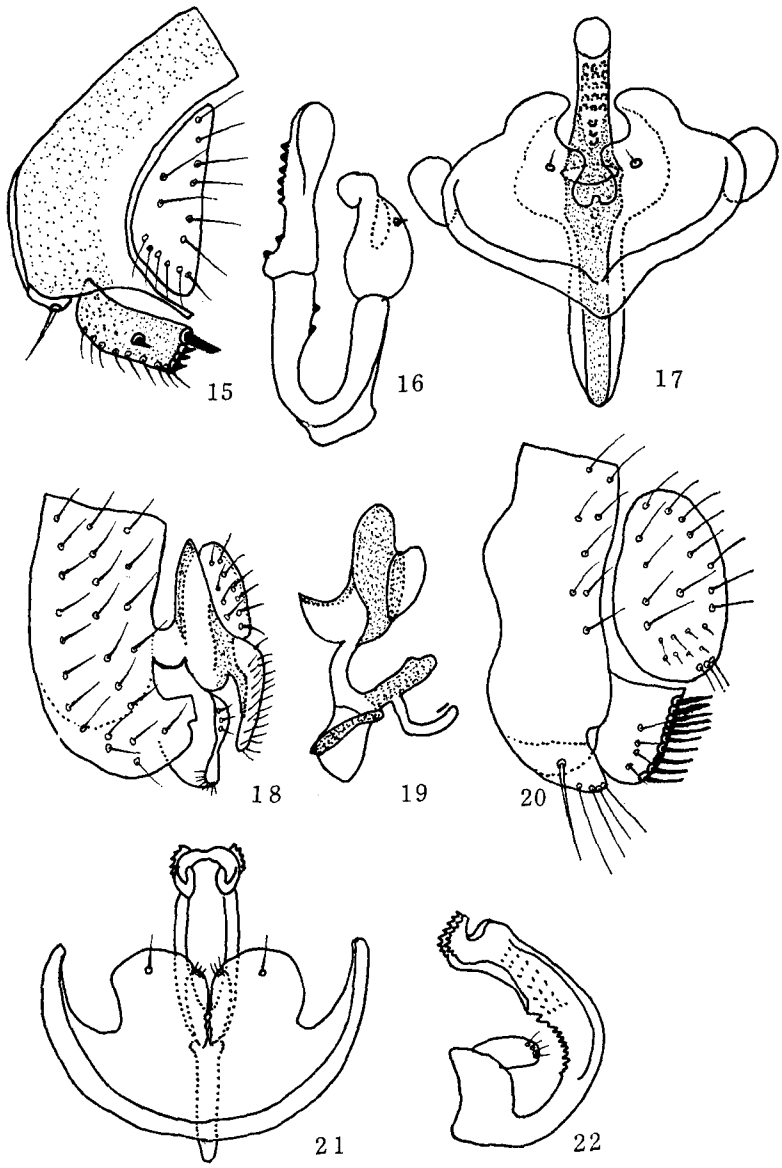
Distribution: West Malaysia.

Dettopsomyia preciosa (de Meijere)

Drosophila preciosa de Meijere, 1911, Tijdschr. Ent. 54: 410 (Java).
Dettopsomyia preciosa (de meijere), Duda, 1926, Suppl. Ent. 14: 61.

Specimen examined, one male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Indonesia, Solomon Is., Caroline Is., and West Malaysia (new record.)



Figs. 15–17, *Dettopsomyia equscauda* n. sp. 15, periphallic organs; 16, phallic organs, lateral aspect; 17, phallic organs, ventral aspect. Figs. 18–19, *Microdrosophila bullata* n. sp. 18, periphallic organs; 19, phallic organs, lateral aspect. Figs. 20–22, *Mycodrosophila nigropleurata* n. sp. 20, periphallic organs; 21, phallic organs, ventral aspect; 22, phallic organs, lateral aspect.

Genus *Microdrosophila* Malloch

Microdrosophila Malloch, 1921, Ent. News 32: 312.
Type-species: *Drosophila quadrate* Sturtevant, 1916: 341 (North America).

Microdrosophila bullata Takada & Momma. **n. sp.**

(Text-figs. 18–19)

Male. Body 2.0 mm, wings 1.9 mm in length. Arista with about 8 branches above, 3 below, besides a small fork. Proclinate orbitals 2/3 of posterior reclinate; middle orbitals minute. Front yellowish tan. Palpi brown. Only one prominent vibrissa. One humeral.

Mesonotum dull tan, with a pair of diffuse brownish stripes between dorsocentral lines onto scutellum; acrostichal hairs in about 6 rows. Posterior scutellars divergent. Abdominal tergites brownish tan.

Wings hyaline; C-index about 1.0; 4V-index about 3.9; 4C-index about 3.0; 5x-index about 3.5; Ac-index about 4.0; C3 fringe on basal 5/6.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

Genus *Mycodrosophila* Oldenberg

Mycodrosophila Oldenberg, 1914, Archiv Natur. A, 80 (2): 4.
Type-species: *Amiota poecilogastra* Loew (Europe).

Mycodrosophila nigropleurata Takada & Momma, **n. sp.**

(Text-figs. 20–22)

Male & female. Body 3.0 mm, wings 2.8 mm in length. Arista with 4–5 branches above, one below, besides a terminal fork. Orbital bristles in the ratio 4:1:4. Vibrissa long. Front of both sexes strongly whitish pruinose when viewed from certain angles.

Mesonotum shiny, black to dark brown, scutellum velvety black. Sternopleura and lower portion of pteroplura dark brown. Acrostichal hairs in 10 rows; no anterior drosocentrals. Basal scutellars shorter than apicals. Halters almost blackened. Abdominal tergites yellow with prominent black bands; 1T, 6T and 7T are yellow, 2T to 5T with apical black bands, especially 2T interrapted at middle. Legs yellow; fore tarsi with about 7 hairs anteriorly, and with short comb-like spines at posteriorly in male.

Wings hyaline, distal costal break deeply incised, apex of costa blackened and protruding; C-index about 2.3; 4V-index about 2.1; 4C-index about 1.1; 5x-index about 2.0; Ac-index about 6.0; C3 fringe on basal 3/4. Phallosomal in dex about 3.5.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West

Malaysia, Dec. 18, 1972 (Momma).

Allotype, female in alcoholized, collected together with holotype.

Distribution: West Malaysia.

Mycodrosophila amabilis (de Meijere)

(Text-figs. 23–24)

Drosophila amabilis de Meijere, 1911, Tejdschr. Ent. 54: 405 (Indonesia).
Mycodrosophila amabilis (de Meijere), Duda, 1924, Archiv Natur. A, 90 (3): 193.

Specimen examined, one male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Indoensia, Micronesia, and West Malaysia (new record).

Genus ***Hypselothyrea*** de Meijere

Hypselothyrea de Meijere, 1906, Annls hist-nat. Mus. nat. Hung. 4: 193. Type-species: *Hypselothyrea dimidiata* de Mejiere, 1906 (New Guinea).

Hypselothyrea pseudoguttata Takada & Momma, **n. sp.**

(Text-figs. 25–27)

Male. Body 1.5 mm, wings 1.4 m in length. Arista with 3 branches above, 2 below, besides a terminal fork. Head somewhat broader than thorax. Third joints of a ntennae broad, tip rounded, yellowish brown and anteriorly dark brown. Palpi dark brown, slender with a stout apical seta. Front dark brown, glossy, quadrate, as broad as long. Orbital bristles in the ratio 2:4, no posterior reclinate. Vibrissa fine, long. Ocellars rather short.

Mesonotum convex, dark reddish brown, shining. Scutellum triangular, velvety, tip protruding dorsoposteriorly, dark brown, marginally white. Acrostichal hairs in 2 rows. Posterior dorsocentrals longer than the anteriors. Scutellars parallel, anteriors and posteriors in the ratio 2:7. Sternopleura dark brown; only one sternopleural. Legs pale yellow; fore femur basally dark, with anteroventrally 4 small black teeth. Abdomen narrowing anteriorly; abdominal tergites yellowish brown, glossy; 4T to 6T with black patches at lateral edges and 6T with obliquely black mark on lateral sides. Halters brown at middle, marginally pale tan.

Wings broad, with scattered large black patches roughly in six transverse rows; costa irregularly sinuate; C-index about 0.9; 4V-index about 3.4; 4C-index about 3.2; 5x-index about 1.3; Ac-index about 4.0; C3 fringe on basal 1/2.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratypes, many specimens of males, collected together with holotype.

Distribution: West Malaysia.

Hypselothyrea paraguttata Takada & Momma, **n. sp.**

(Text-figs. 28–29)

Male. Closely related *Hy. pseudoguttata* Takada & Momma, n. sp., but differ from it in having 4 rows of acrostichal hairs (2 in *pseudoguttata*); two orbital bristles in the ratio 2:3; 2T to 5T with black patches on lateral edges; and different shapes of periphallic organs and phallic organs. Wing indices; C-index about 0.8; 4V-index about 3.0; 4C-index about 2.8; 5x-index about 2.0; Ac-index about 2.8; C3 fringe on basal 3/4.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Paratype, one male in alcoholized, collected together with holotype.

Distribution: West Malaysia.

Genus ***Nesiodrosophila*** Wheeler & Takada

Nesiodrosophila Wheeler & Takada, 1964. Bishop Mus., Insect of Micronesia, 14, 6: 238.

Type-species: *Nesiodrosophila lindae* Wheeler & Takada, 1964 (Caroline Is.).

Nesiodrosophila species ***a***

(Text-fig. 30)

Female. Body 2.0 mm, wings 1.5 mm in length; wings short and and abdomen slender. Arista 2 branches above, one below, besides a terminal fork. Ocellars outside ocellar triangle; anterior reclinate orbital nearly as large as proclinate, beside it the two placed rather far forward on front; posterior reclinate larger. Vibrissa single.

Mesonotum dull tan; acrostichal hairs in 2 prominent rows. Posterior dorsocentrals rather shorter than anteriors. Scutellum dull tan, posterior scutellars divergent. Halters brown. Legs pale; fore second tarsi with a stout flattened apical spine. Abdomen dull tan, 2T to 7T with lateral brown spots on each sides.

Wings hyaline, anal vein weak; C-index about 1.7; 4V-index about 2.8; 4C-index about 1.6; 5x-index about 3.0; Ac-index about 3.3; C3 fringe on basal 7/10.

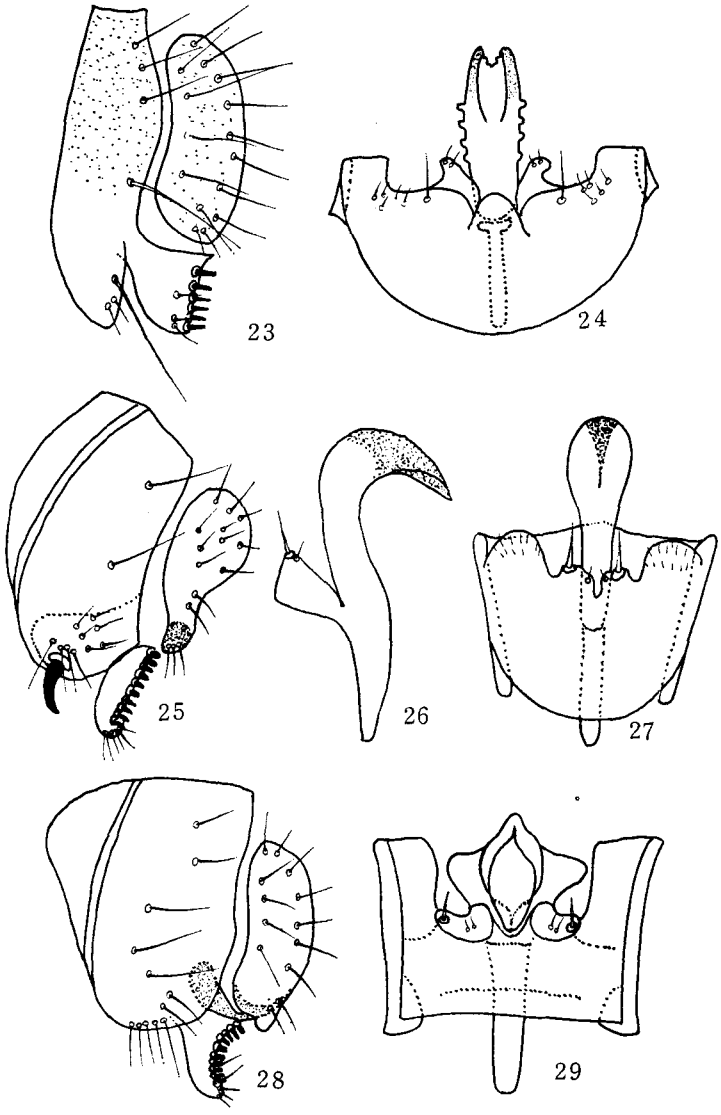
Specimen examined, female in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Distribution: West Malaysia.

Genus ***Lissocephala*** Malloch

Lissocephala Malloch, 1929, Ann. Mag. Nat. Hist. 10, 4: 250.

Type-species: *Liss. unipuncta* Malloch, 1929 (Africa).



Figs. 23–24, *Mycodrosophila amabilis* (de Meijere). 23, periphallic organs; 24, phallic organs, ventral aspect. Figs. 25–27, *Hypselothyrea pseudoguttata* n. sp. 25, periphallic organs; 26, phallic organs, lateral aspect; 27, phallic organs, ventral aspect. Figs. 28–29. *Hypselothyrea paraguttata* n. sp. 28, periphallic organs; 29, phallic organs, ventral aspect.

Lissocephala asiatica Okada

(Text-figs. 38, 39)

Lissocephala asiatica Okada, 1964, Kontyu 32 (1): 106 (Japan).
Zygothrica asiatica (Okada), Okada, 1965, Kontyu 33 (3): 337.

Specimens examined, 2 males in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: Japan and West Malaysia (new record).

Lissocephala parasiatica Takada & Momma, **n. sp.**

(Text-figs. 33, 40–42)

Male. Body 1.5 mm, wings 1.5 mm in length. Arista with 8 long branches above, 3 below, besides a terminal fork. Antennae; 1st joint white and 3rd joint black, triangular. Head metalic blue black, broader than thorax; front with many eruptions; face, bucca and cheeks black. Ocellars minute. Anterior reclinate minute. Two vibrissae equal in size.

Mesonotum pale yellowish brown, laterally with a large glossy black somewhat purplish spot; scutellum pale yellowish brown, laterally black. Acrostichal hairs in 2 rows, scanty; dorsocentrals and anterior scutellars equal in length, posterior scutellars convergent. Thoracic pleura yellow, sternopisternum purpulish black, upper and lower margins of episternum black. Legs yellow, fore femora with a apical spot. Abdomen glossy dark brownish black from 2T to 5T, 6T yellow and 7T with median black spot.

Wings narrow; C-index about 1.5; 4V-index about 2.5; 4C-index about 1.7; 5x -index about 3.5; Ac-index about 3.5; C3 fringe on basal 1/2.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratypes, 3 males, collected together with holotype.

Distribution: West Malaysia.

Relationships: Closely related *Liss. asiatica* Okada, 1964, from Okinawa, Japan, but differ from it in having large 5x-index and the shape of periphallic organs; rather small species.

Lissocephala indersinghi Takada & Momma, **n. sp.**

(Text-figs. 31, 36, 37, 43–45)

Male. Resembles *Liss. parasiatica* Takada & Momma, n. sp., but differ from it in having upright anterior scutellars and parallel posterior scutellars; shape of male genitalia and color of abdominal tergites of both sexes.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratype, male, collected together with holotype.

Distribution: West Malaysia.

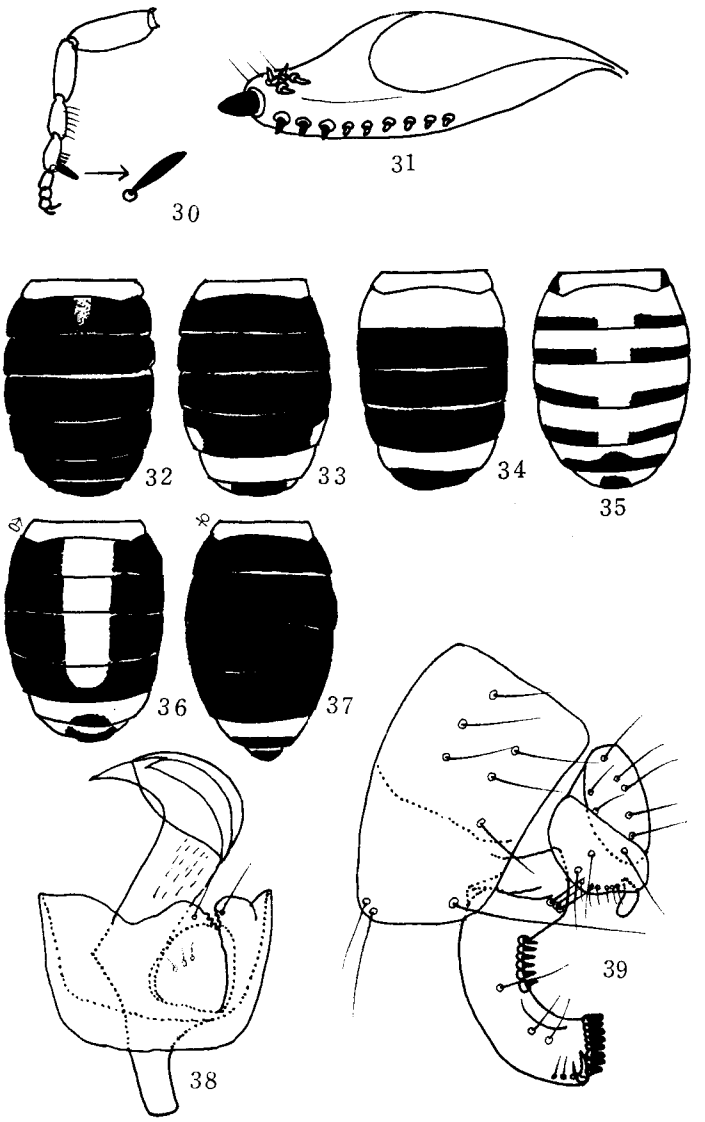


Fig. 30, *Nesiodrosophila* species *a*, fore leg of female. Fig. 31, ***Lissocephala indersinghi*** n. sp., egg-guide. Figs. 32–36, abdomens of male; 32, *Lisso. asiatica Okada*; 33, *Lisso. parasiatica* n. sp.; 34, *Lisso. neoasiatica* n. sp.; 35., *Lisso. corpusculata* n. sp.; 36, *Lisso. indersinghi* n. sp. Fig. 37, *Lisso. indersinghi*, n. sp., abdomen of female. Figs. 38–39, *Lisso. asiatica* Okada. 38, phallic organs, lateral aspect; 39, periphallic organs.

The new species is named in honour of Dr. K. Inder Singh, Department of Entomology, Institute for Medical Research, Malaysia.

Lissocephala neoasiatica Takada & Momma, **n. sp.**

(Text-figs. 34, 49, 50)

Male. Closely related *Liss. asiatica* Okada, but differ from it in having the shape of male external genital apparatus and color pattern of abdominal tergites of male. Black spots of thoracic pleura rather small.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

Lissocephala corpusculata Takada & Momma, **n. sp.**

(Text-figs. 35, 46–48)

Male. Body 1.4 mm, wigngs 1.5 mm; wing length rather longer than the body length. Head metalic purplish black. Antennae brown, third joint flat. Arista with 3 branches above, 2 below, besides a terminal fork.

Mesonotum metalic blue black, slightly convex; acrostichal hairs in 2 rows. Thoracic pleura blackish brown, glossy. Anterior dorsocentrals present. Scutellum velvety, posterior scutellars parallel. Halters brown. Legs yellowish brown; fore coxa and femur black, middle femur dark brown, hind femur pale brown. Abdomen yellow, each tergites with apical black bands, interrupted at middle.

Wings hyaline, distal incision not so deep, lappet black; C-index about 1.1; 4V-index about 2.4; 4C-index about 2.0; 5x-index about 4.0; Ac-index about 3.3; C3 fringe on basal 3/5.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Allotype, female, collected together with holotype.

Paratypes, one male, and one female, collected together with holotype.

Distribution: West Malaysia.

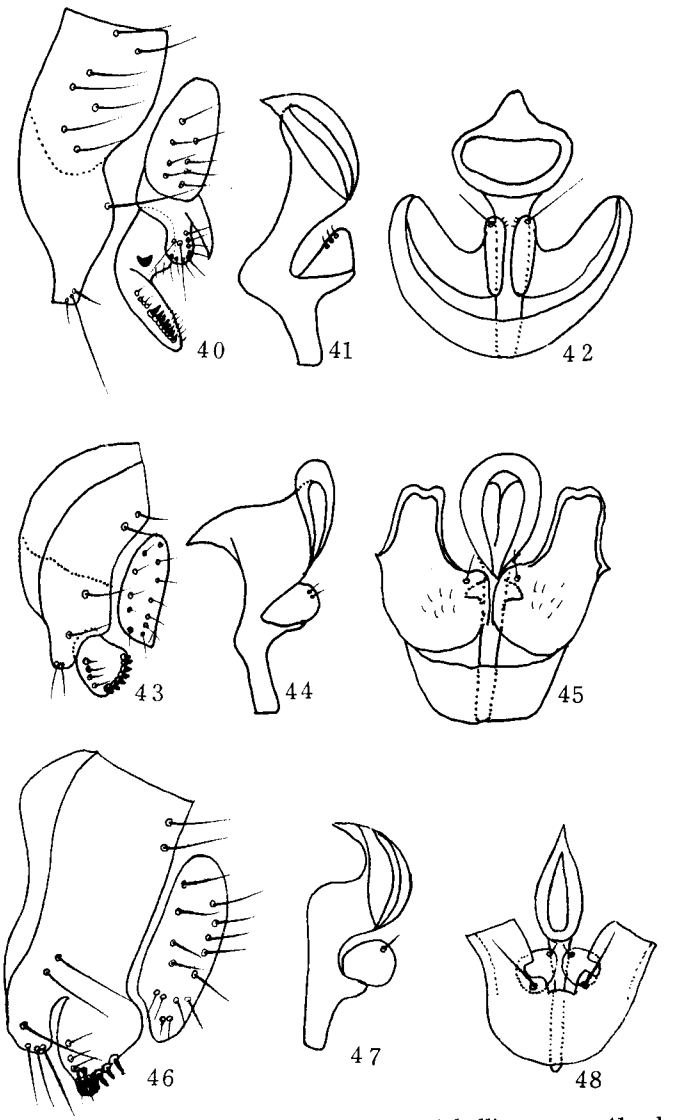
Genus ***Liodrosophila*** Duda

Liodrosophila Duda, 1922, Archiv Naturgesch. A, 88 (4): 153.
Type-species: *Camilla coeruleifrons* de Meijere (Java).

Liodrosophila crassipeda Takada & Momma, **n. sp.**

(Text-figs. 55–57)

Male. Body 2.0 mm, wings 2.0 mm in length. Head broader than thorax. Antennae with third joint tannish brown, broad and flat. Arista with 5 branches above, 2 below, besides a terminal fork. Front flat, glossy blackish brown, Some what shning blue, anterior margin orange brown. Palpus black, with a fine



Figs. 40–42, *Lissocephala parasiatica* n. sp. 40, periphallic organs; 41, phallic organs, lateral aspect; 42, phallic organs, ventral asecpt. Figs. 43–45, *Lisso. indersinghi* n. sp. 43, periphallic organs; 44, phallic organs, lateral aspect; 45, phallic organs, ventral aspect. Figs. 46–48, *Lisso. corpusculata* n. sp. 46, periphallic organs; 47, phallic organs, lateral aspect; 48, phallic organs, ventral aspect.

long terminal seta. Ocellar triangle black, convex, ocellars long. Periorbit glossy blackish brown, convex, anteriorly narrow; anterior reclinate minute, proclinate and posterior reclinate in the ratio 5: 7 in length. Vibrissa well developed, succeeding one shorter than first.

Mesonotum blackish brown, shining; acrostichal hairs in 2-4 irregular rows. Halters yellow. Scutellum velvety black. Legs yellowish amber; fore femora swollen with about 20 blackish anteroventral spines and with a row of long ventral hairs. Abdominal tergites glossy dark brown.

Wings clear, veins and alura brown; C-index about 1.6; 4V-index about 3.0; 4C-index about 2.0; 5x-index about 2.0; Ac-index about 4.0; C3 fringe on basal 5/8. Phallosomal index about 1.6.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Liodrosophila pugnicoxa Takada & Momma, **n. sp.**

(Text-figs. 58–60)

Male. Resembles *Lio. crassipeda* Takada & Momma, n. sp., but differ from it in having fisted-shape fore coxa, small wing indicies, different shapes of phallic and periphallic organs. C-index about 1.2; 4V-index about 2.3; 4C-index about 1.8; 5x-index about 3.0; Ac-index about 3.2; C3 fringe on basal 2/3. Phallosomal index about 2.0.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

Liodrosophila marginifrons Duda

(Text-figs. 51, 52, 61, 62)

Liodrosophila marginifrons Duda, 1922. Arch. Naturg. 88A, 4: 157.– 1926. Suppl. Ent. 14: 53 (Sumatra).

Male & female. Body 2.0 mm, wings 1.8 mm in length. Arista with 4 above, 2 below, besides a terminal fork. Orbital bristles in the ratio 4:1:8.

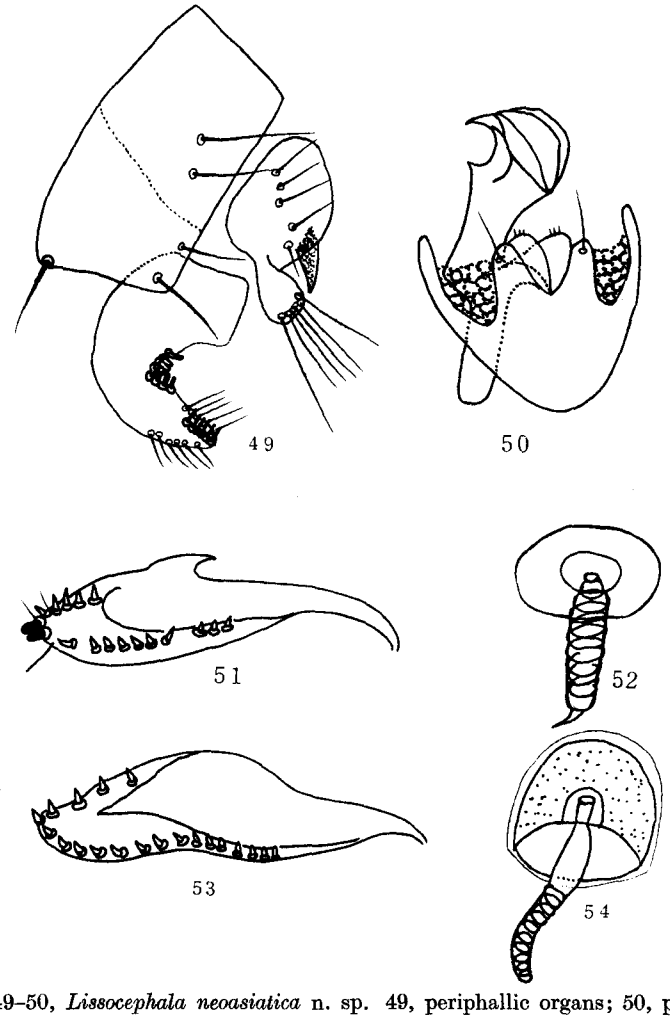
Mesonotum convex, tannish brown, glossy; acrostichal hairs in 2 rows. Scutellum velvety black. Halters yellow, basally dark. Sterno-index about 0.5. Abdominal tergites dark brown.

Wings hyaline; C-index about 1.1; 4V-index about 3.0; 4C-index about 2.3; 5x-index about 2.0; Ac-index about 4.0; C3 fringe on basal 5/7.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Allotype, female, collected together with holotype.

Distribution: West Malaysia, Vietnam and Sumatra.



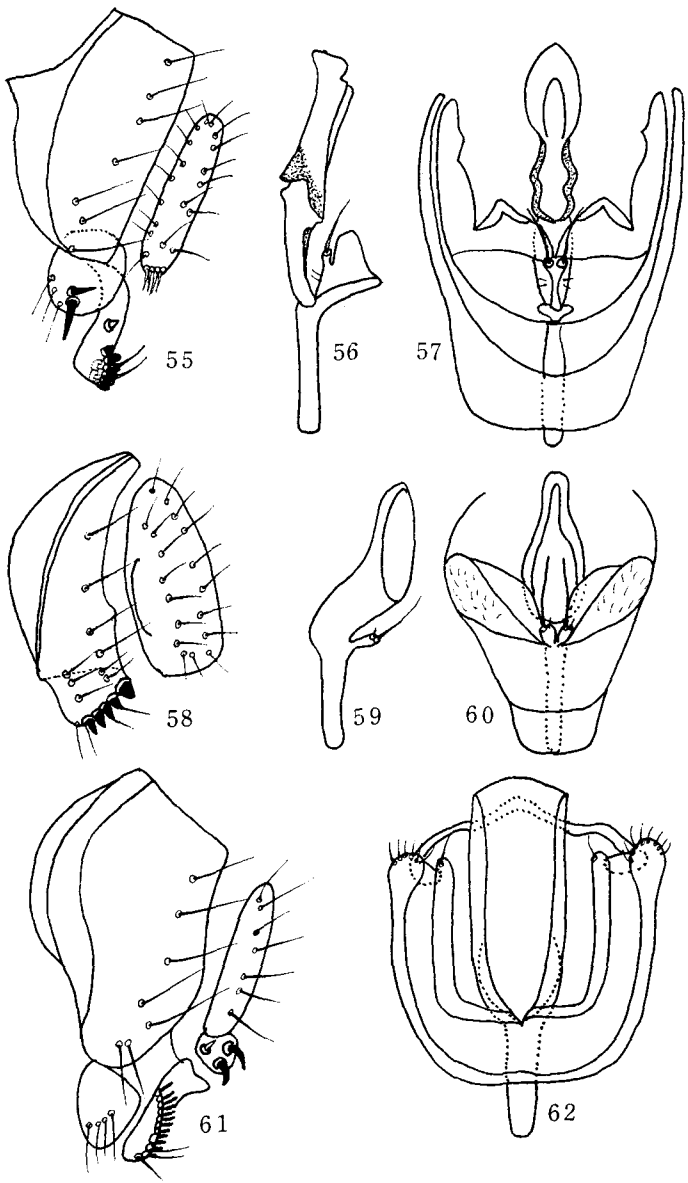
Figs. 49–50, *Lissocephala neoasiatica* n. sp. 49, periphallic organs; 50, phallic organs, lateral aspect. Figs. 51–52, *Liodrosophila marginifrons* Duda. 51, egg-guide; 52, spermatheca. Figs. 53–54, *Drosophila circumdata* Duda. 53, egg-guide; 54, spermatheca.

Liodrosophila minicosta Takada & Momma, **n. sp.**

(Text-figs. 63–64)

Male. Body 1.5 mm, wings 1.5 mm in length. Head, mesonotum and abdomen dark brown, shining. Arista with 4 branches above, 2 below, besides a terminal fork. Acrostichal hairs in 4 rows.

Wings hyaline; C- index about 0.8; 4V-index about 2.6; 4C-index about 2.5; 5x-index about 3.0; Ac-index about 4.0; C3 fringe on basal 5/8. Small species.



Figs. 55–57, *Liodrosophila crassipeda* n. sp. 55, periphallic organs; 56, phallic organs, lateral aspect; 57, phallic organs, ventral aspect. Figs. 58–60, *Lio. pugnicoxa* n. sp. 58, periphallic organs; 59, phallic organs, lateral aspect; 60, phallic organs, ventral aspect. Figs. 61–62, *Lio. marginifrons* Duda. 61, periphallic organs; 62, phallic organs, ventral aspect.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Liodrosophila trichaetopennis Takada & Momma, **n. sp.**

(Text-figs. 65–67)

Male. Body 2.2 mm, wings 2.1 mm in length. Head, mesonotum and abdomen glossy brownish black; scutellum velvety black, Arista with 4 branches above, 2 below, besides a terminal fork. Orbital bristles in the ratio 4:1:5. Acrostichal hairs in 4 irregular rows. Posterior scutellars parallel. Halters yellowish white. Legs brownish yellow; fore and middle femora dark brownish yellow, fore femur with a row of short stout teeth on inner side; preapicals prominent on hind metatarsus.

Wings clear, veins brown; C-inde about 1.6; 4V-index about 2.0; 4C-index about 1.5; 5x-index about 1.6; Ac-index about 3.3; C3 fringe on basal 2/5.

Periphallic organs: Genital arch very broad upper portion, and narrow below.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratypes, 2 males, collected together with holotype.

Distribution: West Malaysia.

Liodrosophila parabimaculata Takada & Momma, **n. sp.**

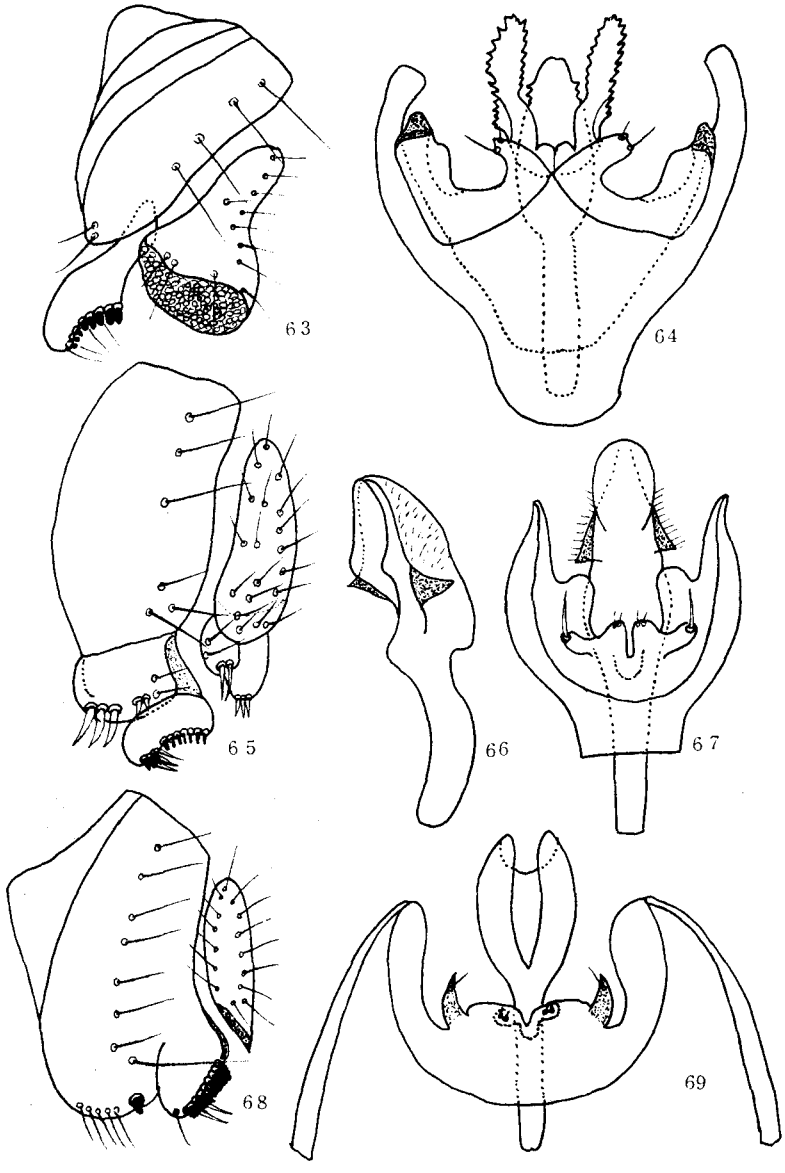
(Text-figs. 68, 69)

Male. Body 2.5 mm, wings 2.3 mm in length. Head, mesonotum and abdomen brownish black. Scutellum pollinose, brownish black. Arista with 3 branches above, 2 below, besides a terminal fork. Proclinate one-half in length of posterior reclinate, anterior one minute. Carina high and black; front brown, glossy. Palpi brown with only one apical seta. Medioproboscis protruding, brown. Anterior dorsocentrals shorter than posteriors. Halters pale brown. Legs yellow, fore femur with a row of stout bristles on ventral side, distal one stout and long. Abdomen narrow and rather long.

Wings narrow, with two large fuscous spots; one triangular, basal to posterior crossvein, and the other one round, large, outside of posterior crossvein; crossveins weak; R2–3 curved strongly to costa at middle; R4–5 and M nearly parallel; C-index about 2.9; 4V-index about 2.5; 4C-index about 1.0; 5x-index about 2.5; Ac-index about 2.0; C3 fringe on basal 2/5.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malysia, July 3, 1972 (Takada).

Distribution: West Malaysia.



Figs. 63–64, *Liodrosophila minicosta* n. sp. 63, periphallic organs; 64, phallic organs, vemtral aspect. Figs. 65–67, *Lio. trichaetopennis* n. sp. 65, periphallic organs; 66, aedeagus in lateral view; 67, phallic organs in ventral aspect. Figs. 68–69, *Lio. parabimaculata* n. sp. 68, periphallic organs; 69, phallic organs in ventral aspect.

Liodrosophila malleopyga Takada & Momma, **n. sp.**

(Text-figs. 70–72)

Male. Body 1.5 mm in length. Head glossy, blackish brown. Antennae yellow, 3rd joint dark brown anteriorly. Arista with 5 branches above, 2 below, besides a terminal fork. Vibrissa well developed. Palpi with a long apical seta.

Mesonotum, thracic pleura and abdominal tergites brownish black, glossy. Scutellum velvety black. Lower half of hemeral callus reddish yellow. Acrostichal hairs in 4–6 rows. Halters dark brown. Legs yellow, femora glossy, dark brown; fore and hind femora swollen, middle one thick. Phallic organs well chitinized.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Lidroosophila nigrogibberata Takada & Momma, **n. sp.**

(Text-figs. 73–74)

Male. Body 2.0 mm, wings 1.9 mm in length. Resembles to *Lio. malleopyga* n.sp., especially in the characteristics of head, mesonotum, scutellum, abdominal tergites, legs and branches of arista, but differs from it in having shape of phallic and periphallic organs. Halters pale brown apically. Acrostichal hairs in 6 rows.

Wings hyaline, costal vein with a distal stout spine; C-index about 1.1; 4V-index about 1.8; 4C-index about 1.7; 5x-index about 1.6; Ac-index about 4.1; C3 fringe on basal 3/5.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Genus ***Scaptomyza*** Hardy

Scaptomyza Hardy, 1849, Berwickshire Nat. Club, Proc. 361.
Type-species: *Drosophila graminum* Fallén (Europe).

Scaptomyza spiculipennis Takada & Momma, **n. sp.**

(Text-figs. 75–76)

Male. Minute species. Body 1.2 mm, Wings 1.2 mm in length. Arista with about 4 branches above, 3 below, besides a small terminal fork. Front pale yellow, anterior reclinate minute, situated inside of orbital line; proclinate and posterior reclinate subequal. Vibrissa single, fine. Palpi yellow, with a apical seta.

Mesonotum and thoracic pleura pale yellow. Acrostichal hairs in 2 rows. Ratio anterior and posterior dorsocentrals 0.4. Sterno-index about 0.3. Halters

yellow. Legs yellow. Abdomen pale yellow.

Wings transparent, slightly narrow; C-index about 1.6; 4V-index about 2.6; 4C-index about 1.6; 5x-index about 3.3; Ac-index about 2.7; C3 fringe on basal 3/4; anal vein absent.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Genus ***Drosophlia*** Fallen

Drosophila Fallén, 1823, Geomyzides Sveciae 2: 4.
Type-species: *Musca funebris* Fabricius (Sweden).

Subgenus ***Hirtodrosophila*** Duda

Hirtodrosophila Duda, 1923, Mus. Nat. Hungarici, Ann. 20: 41.
Type-species: *Drosophila latifrontata* Frota-Pessoa (Taiwan).

Drosophila longialata Takada & Momma, **n. sp.**

Female. Body 3.0 mm in length, abdomen slender, curved forward. Wings 2.8 mm in length, narrow, 0.9 mm in width. Head orange brown, anterior margin orange yellow. Arista with 4 branches above, 2 below, besides a terminal fork. Third joints of antennae flat, pale brown. Ocellar triangle convex, brown, at posterior edge. Anterior reclinate minute, proclinate as long as posterior reclinate, long. Carina high, dark yellow. Vibrissa long, succeeding orals fine. Palpi broad and dark brown, with a apical seta and several ventral setae. Proboscis large, crescent.

Mesonotum tannish brown with two broad yellowish longitudinal stripes which are confluent to become near scutellum; dorsocentrals lines reddish brown; acrostichal hairs in 2–4 irregular rows.

Wings fuscous, veins brown; C-index about 5.2; 4V-index about 1.3; 4C-index about 0.5; 5x-index about 2.5; Ac-index about 1.0; C3 fringe on basal 3/4.

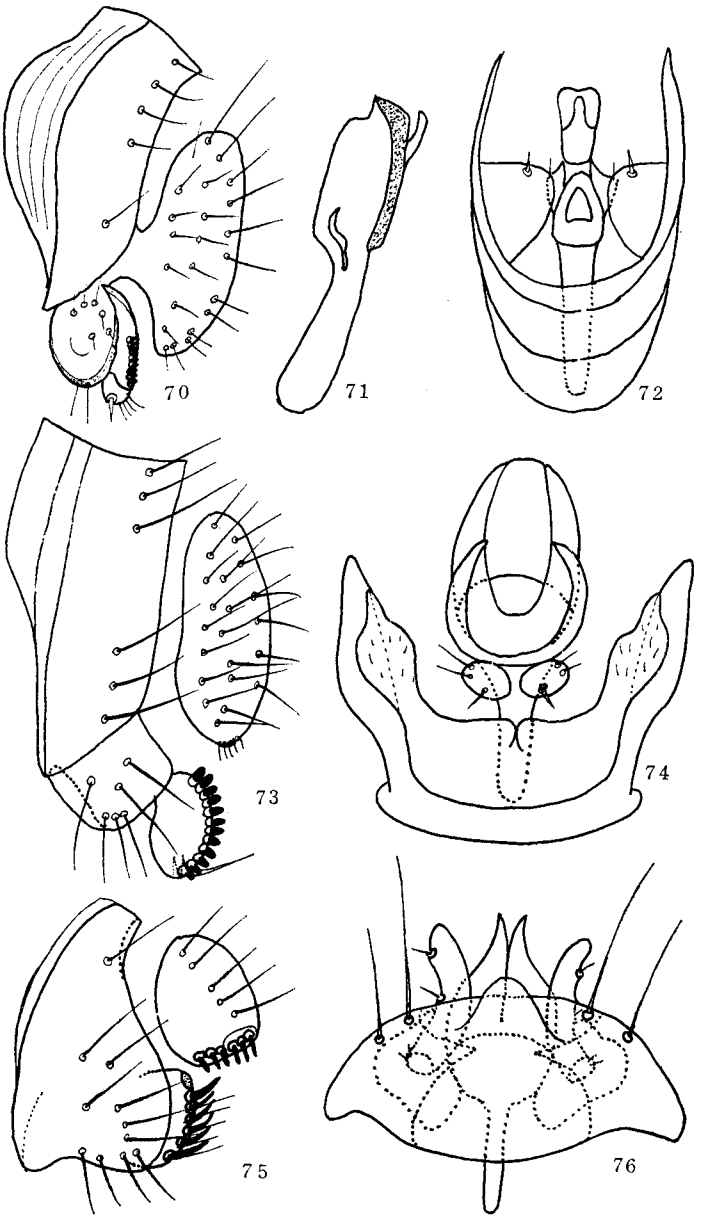
Holotype, female, Gomgak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

Drosophila longicorpata Takada & Momma, **n. sp.**

(Text-figs. 77–82)

Male & female. Body 2.2 mm, wings 2.1 mm in male; body 3.2 mm and wings 3.2 mm in female. Antennae yellowish white; arista with 3 branches above, 2 below, besides a terminal fork. Head yellow; ocellars parallel, postverticals and anterior reclinates minute, proclinate and posterior reclinate in the ratio 1:1. Verticals portions dark brown, triangular. Carina high, face yellow.



Figs. 70–72, *Liodrosophila malleopyga* n. sp. 70, periphallic organs; 71, aedeagus in lateral view; 72, phallic organs in ventral aspect. Figs. 73–74, *Lio. nigrogibberata* n. sp. 73, periphallic organs; 74, phallic organs in ventral aspect. Figs. 75–76, *Scaptomyza spiculipennis* n. sp., 75, periphallic organs; 76, phallic organs in ventral aspect.

Mesonotum yellow, with two dark brownish longitudinal stripes on outside of dorsocentral lines; acrostichal hairs in 2–4 rows. Sterno-index about 0.5. Third tergite to distal tergite dark brown. Halters pale brown.

Wings fuscous, especially dark brown on marginal cell and tip of submarginal cell; C-index about 3.1; 4V-index about 1.4; 4C-index about 0.8; 5x-index about 1.2; Ac-index about 2.0; C3 fringe on basal 1/2. Phallosomal index about 0.5.

Holotype, male, in alcoholized Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Allotype, female in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Paratype, female in alcoholized, collected together with allotype.

Distribution: West Malaysia.

Relationships: Resembles *D.* (*H.*) *longialata* Takada & Momma, n. sp., in having curved abdomen, slender wings, branches of arista and rows of acrostichal hairs, but differ from shape of proboscis, pattern of longitudinal stripes of mesonotum and wings indicies (C-index about 5.2 in *longialata*).

Drosophila longicrinita Duda

Drosophila (*Hirotodrosophila*) *longicrinita* Duda, 1924, Arch Naturg., 90(A) 3: 204.

Specimen examined, one male, Gombak, near Kuala Lumpur, West Malaysia, July, 1972 (Momma).

Distribution: Formosa, Java, New Guinea and West Malaysia (new record).

Subgenus ***Sophophora*** Sturtevant

Sophophora Sturtevant, 1939, National Acad. Sci. Proc. 25: 139.
Type-species: *Drosophila melanogaster* Meigne (World wide).

melanogaster species group Sturtevant

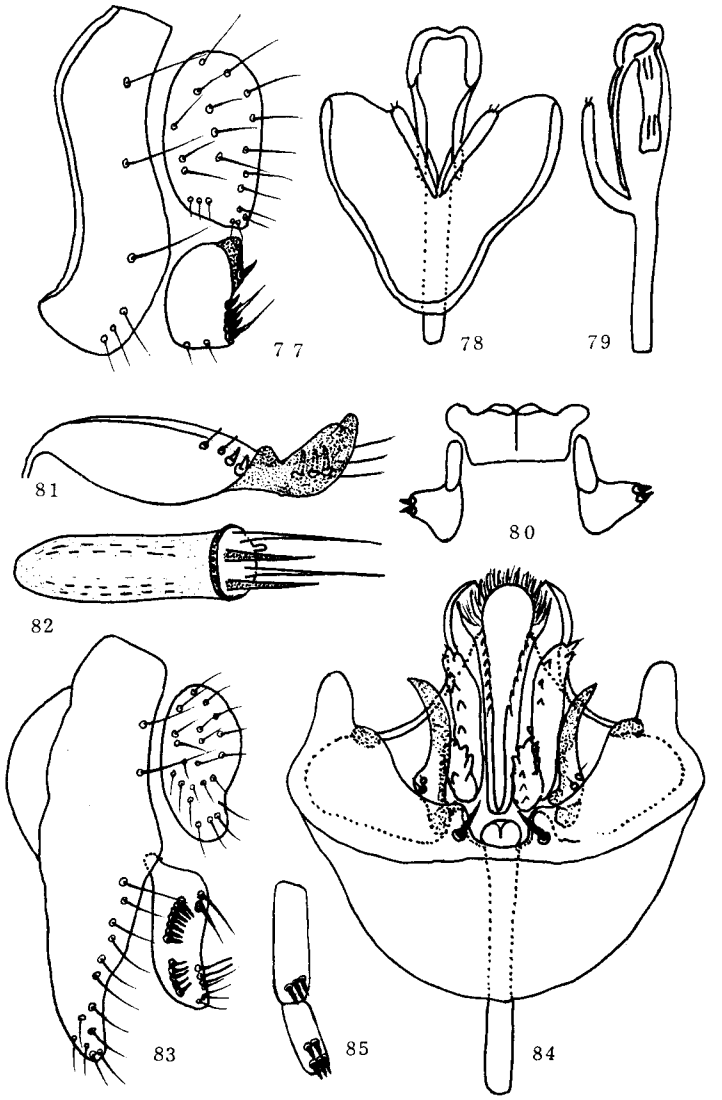
The ***takahashii*** subgroup Hsu

Drosophila retnasabapathyi Takada & Momma, **n. sp.**

(Text-figs. 83–85)

Male. Body 1.9 mm, wings 1.7 mm in length. Arista with 4–5 branches above, 2 below, besides a terminal fork. Front tannish yellow, anterior margin reddish orange. Orbital bristles in the ratio 3:1:3. Carina prominent, narrow. First and second vibrissae same length, succeeding orals about 2/3 of seconds.

Mesonotum tannish yellow; acrostichal hairs in 8 rows. Ratio anterior and posterior dorsocentrals 0.6. Lower humerals long. Sterno-index about 0.4. Sex-combs in short transverse rows of stout black bristles, one distal metatarsal row, 3 teeth; and 2 rows on the second tarsal segment, 2 and 3 tteth. Halters tan-



Figs. 77–82, *Drosophila longicorpata* n. sp. 77, periphallic organs; 78, phallic organs in ventral aspect; 79, phallic organs in lateral view; 80, bridge connecting claspers; 81, egg-guide; 82, egg. Figs. 83–85, *Drosophila retnasabapathyi* n. sp. 83, periphallic organs; 84, phallic organs in ventral aspect; 85, sex-combs of male on 1st & 2nd tarsal segments.

nish yellow. Abdominal tergites yellow with apical black bands from second to fifth, sixth tergites black.

Wings dusky; C-index about 1.8; 4V-index about 2.6; 4C-index about 1.6;

5x-index about 2.5; Ac-index about 2.7; C3 fringe on basal half. Phallosomal index about 0.5.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratype, 3 males, collected together with holotype.

Distribution: West Malaysia.

The new species is named in honour of Dr. A. Retnasabapathy, Faculty of Medicine, University of Malaya.

The ***montium*** subgroup Hsu

Drosophila artecarina Takada & Momma, **n. sp.**

(Text-figs. 86–88)

Male. Body 2.0 mm, wings 1.8 mm in length. Arista with 4 branches above, 2 below, besides a terminal fork. Front tannish yellow, anterior margin reddish orange. Orbital bristles in the ratio 3:1:3. Carina narrow. Vibrissae subequal in size. Palpi with a stout apical bristle.

Mesonotum tannish yellow; acrostichal haris in 6 rows. Ratio anterior and posterior dorsocentrals 0.6. Lower humeral rather longer than upper one. Sex-combs of male longitudinal along entire lengths of metatarsus and second tarsal segment; metatarsal comb with about 16 teeth, smaller above, larger below, lower most 2 displaced from the axis of the remaining teeth; comb on second tarsal segment with about 11 uniform teeth. Abdominal tergites yellow, 2T to 6T with apical brown bands.

Wings transparent; C-index about 1.9; 4V-index about 2.8; 4C-index about 1.6; 5x-index about 2.0; Ac-index about 2.7; C3 fringe on basal 5/8. Phallosomal index about 1.7.

Holotype, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Paratypes, 2 males, collected together with holotype.

Distribution: West Malaysia.

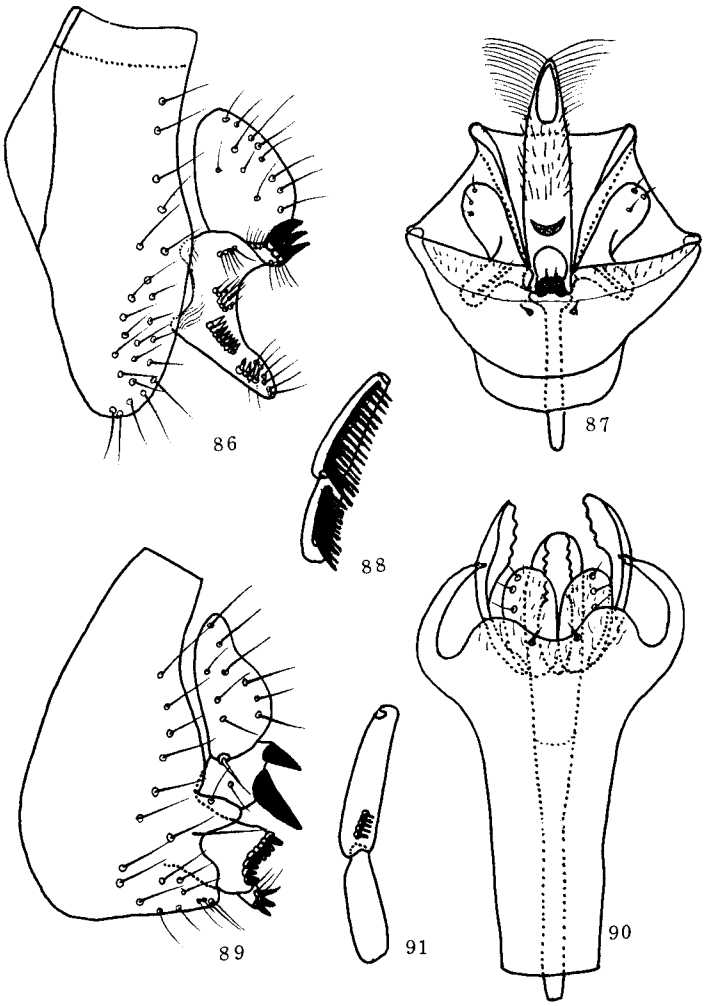
Relationships: Closely related *D.* (Sophophora) *penicillipennis* Takada, Momma & Shima, 1973, from Mt. Kinabalu, East Malaysia, in having hirsute aedeagus, but distinguished from it in having different two claspers.

Drosophila vulcana Graber

(Text-figs. 92–94)

Drosophila vulcana Graber, 1957, Zool. Jahrb. Abt. Syst. 85: 309 (Iganda, Africa). ——, Bock & Wheeler, 1972. Univ. Texas Publ. 7213: 81.

Male. Body 1.6 mm, wings 1.5 mm in length, small species. Arista with 4 branches above, 2 below, with a erminal fork. Front tannish yellow, anterior margin orange yellow. Orbital bristles in the ratio 4:1:4. Carina high. Second



Figs. 86–88, *Drosophila artecarina* n. sp. 86, periphallic organs; 87, phallic organs in ventral aspect; 88, sex-combs of tarsal segments. Figs. 89–91, *Drosophila micropectinata* n. sp. 89, periphallic organs; 90, phallic organs in ventral aspect; 91, sex-comb of metatarsus.

vibrissa equal to firsts. Palpi with a stout apical seta.

Mesonotum tannish yellow, glossy; acrostichal hairs in 8 rows. Ratio anterior and posterior dorsocentrals 0.5. Lower humerals longer than the upper ones. Legs yellow; sex-combs of male longitudinal along entire lengths of metatarsus and second tarsal segment; metatarsal comb with about 18 teeth, lower most 2 long and displaced from the axis of the remaining teeth; comb on second tarsal

segment with about 12 uniform teeth. Abdominal tergites shiny yellow with narrow apical brown bands on 2T to 6T.

Wings transparent; C-index about 1.4; 4V-index about 3.0; 4C-index about 2.0; 5x-index about 2.5; Ac-index about 5.0; C3 fringe on basal 3/5. Phallosomal index about 2.0.

Specimens exmained, 7 males, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia and Thailand.

Drosophila barbarae Bock & Wheeler

Drosophila barbarae Bock & Wheeler, 1972, Univ. Texas Publ. 7213: 62 (Thailand).

Specimens exmained, 2 males, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada),

Distribution: Borneo, West Malaysia, Philippines and Thailand.

Drosophila parvula Bock & Wheeler

Drosophila parvula Bock & Wheeler, 1972, Univ. Texas Publ. 7213: 73 (Malaya).

Specimen exmained, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia and Thailand.

Drosophila baimaii Bock & Wheeler

Drosophila baimaii Bock & Wheeler, 1972, Univ. Texas Publ. 7213: 70 (Thailand).

Specimen examined, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia and Thailand.

The ***suzukii*** subgroup Hsu

Drosophila mimetica Bock & Wheeler

Drosophila mimetica Bock & Wheeler, 1972, Univ. Texas Publ. 7213: 25 (Malaya).

Specimens examined, 6 males and one female, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: West Malaysia.

The ***ananassae*** subgroup Hsu

Drosophila malerkotliana Parshed & Paika

Drosophila malerkotliana Parshed & Paika, 1964, Res. Bull. Panjab Univ. 15: 235 (India).
——, Bock & Wheeler, 1972, Univ. Texas Publ. 7213: 48.

Specimens examined, 2 males, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Borneo, Philippines, Thailand, West Malaysia and India.

Drosophila bipectinata Duda

Drosophila bipectinata Duda, 1923, Ann. Mus. Nat. Hung. 20: 52 (India).

Specimens exmained, many specimens in alcholoized Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Distribution: Samoa, Fiji, Micronesia, New Guinea, Philippines, Borneo, Thailand, West Malaysia (new record), India, Nepal, Japan and Taiwan.

Drosophila pseudoananassae Bock

Drosophila pseudoananassae Bock, 1971, Univ. Texas Publ. 7103: 274 (Australia).
——, Bock & Wheeler, 1972, Univ. Texas. Publ. 7213: 48.

Specimen exmained, one male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Australia, New Guinea, Borneo, Philippines, West Malaysia and Thailand.

The ***ficusphila*** subgroup Okada

Drosophila ficusphila Kikkawa & Peng

Drosophila ficusphila Kikkawa & Peng, 1938, Jap. J. Zool. 7: 531 (Japan).

Specimens exmained, many specimens, Gombak, near Kuala Lumpur, West Malaysia, July 2–4, 1972 (Takada & Momma).

Distribution: Korea, Japan, Taiwan, India and West Malaysia (new record).

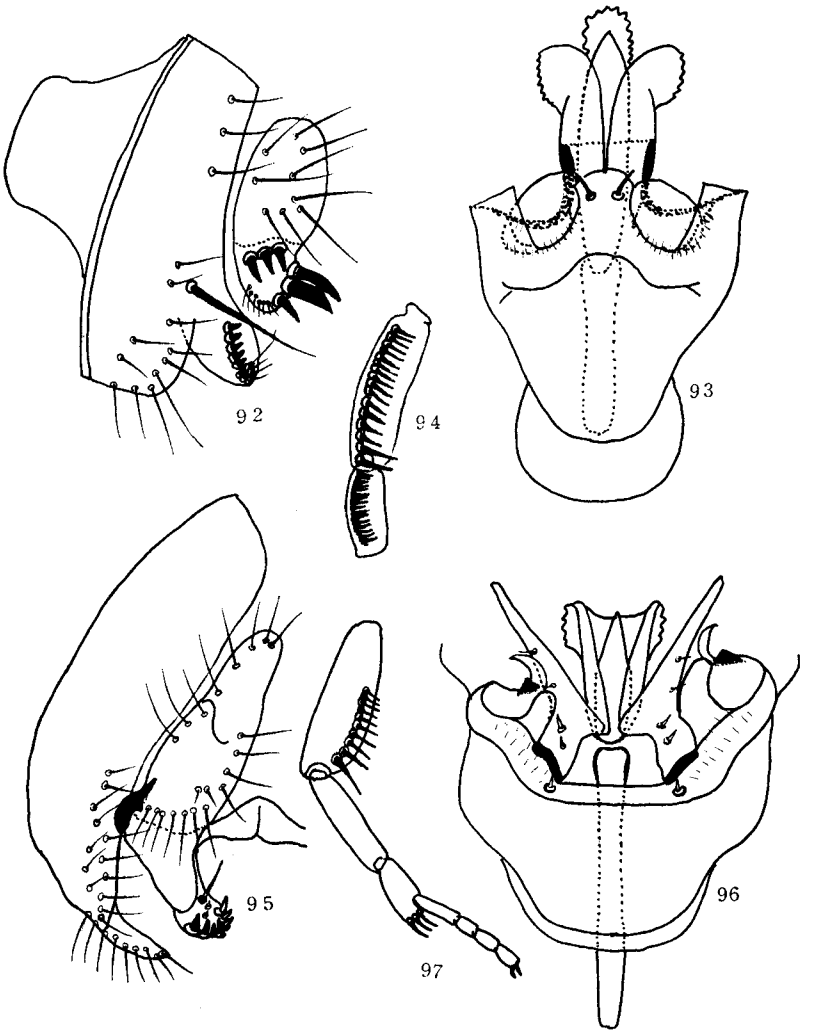
The ***eugracilis*** subgroup Bock & Wheeler

Drosophila eugracilis Bock & Wheeler

Tanygastrella gracilis Duda, 1924, Arch. Naturgesch. 90 A (3): 253 (Java).
Drosophila eugracilis Bock & Wheeler, 1972, Iniv. Tezas Publ. 7213: 31.

Specimen examined, one male, Gombak, near Kuala Limpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Australia, New Guinea, Borneo, Philippines, Java, Sumatra, Cambodia, Thailand, India and West Malaysia (new record).



Figs. 92–94, *Drosophila vulcana* Graber. 92, periphallic organs; 93, phallic organs; 94, sex-combs of male on tarsal segments. Figs. 95–97. *Drosophila pseudodenticulata* n. sp. 95, periphallic organs; 96, phallic organs in vemtral aspect; 97, fore leg of male.

The ***denticulata*** subgroup Bock & Wheeler

Drosophila pseudodenticulata Takada & Momma, **n. sp.**

(Text-figs. 95–97)

Male. Body 2.0 mm, wings 1.7 mm in length. Arista with 5 branches

above, 3 below, besides a terminal fork. Orbital bristles in the ratio 5:2:6. Vibrissa well developed, second oral as long as first palpi with a apical bristtes and few ventral setae.

Mesonotum reddish yellow in alcoholized specimen; acrostichal hairs in 8 rows. Legs yellow; fore femur swollen and shagy on posterior surface, and with a row of about 10 black bristles; sex-comb consisting 3 large claw-like black teeth on the distal border of the fore metatarsus. Abdominal tergites yellow, 2T to 5T with apical caudal brown bands, broader in middle. Sterno-index about 0.6.

Wings transparent; C-index about 1.9; 4V-index about 2.0; 4C-index about 1.3; 5x-index about 2.5; C3 fringe on basal 5/9. Phallosomal index about 0.5.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Paratype, one male in alcoholized, collected together with holotype.

Distribution: West Malaysia.

Relationships: Resembles *D.* (Sophophora) *denticulata* Bock & Wheeler, 1972, but differ from its shape of phallic organs.

"questionable" subgroup

Drosophila* (*Sophophora*) *micropectinata Takada & Mamma, **n. sp.**

(Text-figs. 89–91)

Male. Body 1.9 mm, wings 1.7 mm in length. Arista with 5 branches above 2, below, besides a terminal fork, Orbital bristles in the ratio 2:1:3. Vibrissae long; second oral as long as first, others shorter. Palpi yellow with two apical bristles and several moderatly long ventral setae. Mouthpart yellow; each labellum with a apical long hook-like processes, lateral sides of basal mouthparts with a row of erect setae.

Mesonotum tannish yellow in alcoholized specimen; acrostichal hairs in 6 rows. Ratio anterior and posterior dorsocentrals 0.6. Sterno-index about 0.6. Legs yellow; fore metatarsus with a very small brownish sex-comb consisting of about 4–5 fine teeth which arranged longitudinal along the distal portion. Abdominal tergites yellow, with apical brown bands at middle from 2T to 5T.

Wings dusky and narrow; C-index about 1.2; 4V-index about 2.8; 4C-index about 2.0; 5x-index about 2.5; Ac-index about 3.0; C3 fringe on basal 2/3. Phallosomal index about 0.6.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

Subgenus ***Drosophila*** Fallen

Drosophila Fallén, 1823, Geomyzides Sveciae 2: 4.
Type-species: *Musca funebris* Fabricius (Sweden).

Drosophila polychaeta Patterson & Wheeler

Drosophila polychaeta Patterson & Wheeler, 1942, Univ. Texas Publ. 4213: 102 (North America).

Specimens examined, 5 males and 2 females in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 2, 1972 (Momma).

Distribution: Central and South America, Hawaii, Micronesia and West Malaysia (new record).

immigrans species group Sturtevant

The ***quadrilineata*** subgroup Wilson *et al.*

Drosophila tetravittata Takada & Momma, **n. sp.**

(Text-figs. 103-105)

Male. Body 4.5 mm, wings 4 mm in length, large species. Arista with 4 branches above, 3 below, besides a terminal fork. Front yellowish brown, with two broad dark brown stripes, anteriorly somewhat curved inward. Orbital bristles in the ratio 3:1:4. Vibrissa stout and long. Palpi black and flat, with few stout setae.

Mesonotum yellowish brown with four longitudinal stripes; ones inside each dorsocentral rows, dark brown, continued posteriorly over scutellum; and ones on outside each drosocentral rows, broad and blackish brown. Thoracic pleura with three longitudinal stripes on each lateral sides; one of them lower half of humerus to near wing base; one on mesopleura and the other one on sternopleura. Acrostichal hairs in 4 rows; drosocentrals 2 pairs. Halters white. Abdominal tergites yellow with broad apical brown bands on drosally; 2T to 3T interrupted at middle. Sternites brown.

Wings golden tint; C-index about 1.8; 4V-index about 1.3; 4C-index about 1.0; 5x-index about 1.7; Ac-index about 3.8; C3 fringe on basal 4/5. Phallos mal index about 1.4.

Holotype, male in alcoholized, Gombak, nea Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

Drosophila circumdata Duda

(Text-figs. 53-54)

Drosophila circumdata Duda, 1926, Suppl. Ent. Berlin 14: 42 (Sumatra).

Specimens examined, 2 males and one females, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Sumatra and West Malaysia (new record).

Drosophila nigrilineata Angus

(Test-figs. 98–99)

Drosophila nigrilineata Angus, 1967, Univ. Queensland Papers, Zool., 3, 3: 32 (New Guinea).

Male. Body 2.8 mm, wings 2.7 mm in length. Arista with 7 branches above, 3 below, besides a terminal large fork. Antennae yellow. Front tannish yellow, broad, with three prominent black stripes; one on each orbits and one in midline; anterior margin of front bright orange. heeks yellow, broad, about 1/3 as broad as the greatest diameter of eye. Ocellar triangle convex, balck.

Mesonotum tannish yellow with four longitudinal stripes; one just inside each dorsocentral lines, dark brown, continued posteriorly over scutellum; and one on each side from drosal side of humerus to near wing base, black. Acrostichal hairs in 2 rows; 2 pairs of droscentrals. Halters dark brown at apical half. Sterno-index about 0.3. Abdominal tergites dark yellow, diffuse brownish areas drosally on 2T to 5T. Wings dusky.

Specimen examined, male, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: New Guinea and West Malaysia (new record).

Drosophila quadrilineata de Meijere

Drosophila quadrilineata de Meijere, 1911, Tijdschr. Ent. 54: 396 (Java).

Specimens examined, 4 males, Combak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Java, Philippines, Solomon Is., Admirality Is., Mariana Is. and West Malaysia (new record).

Drosophila annulipes Duda

Drosophila annulipes Duda, 1924, Archiv Naturgesch. A, 90 (3): 209 (Formosa).

Specimen examined, one male, in alcoholized Gombak, near kuala Lumpur, West Malysia, Dec. 18, 1972 (Momma).

Distribution: China, Taiawa, Japan, Philippines, Micronesia, Hawaii, Australia, Africa, Europe, North and South America and West Malaysia (new record).

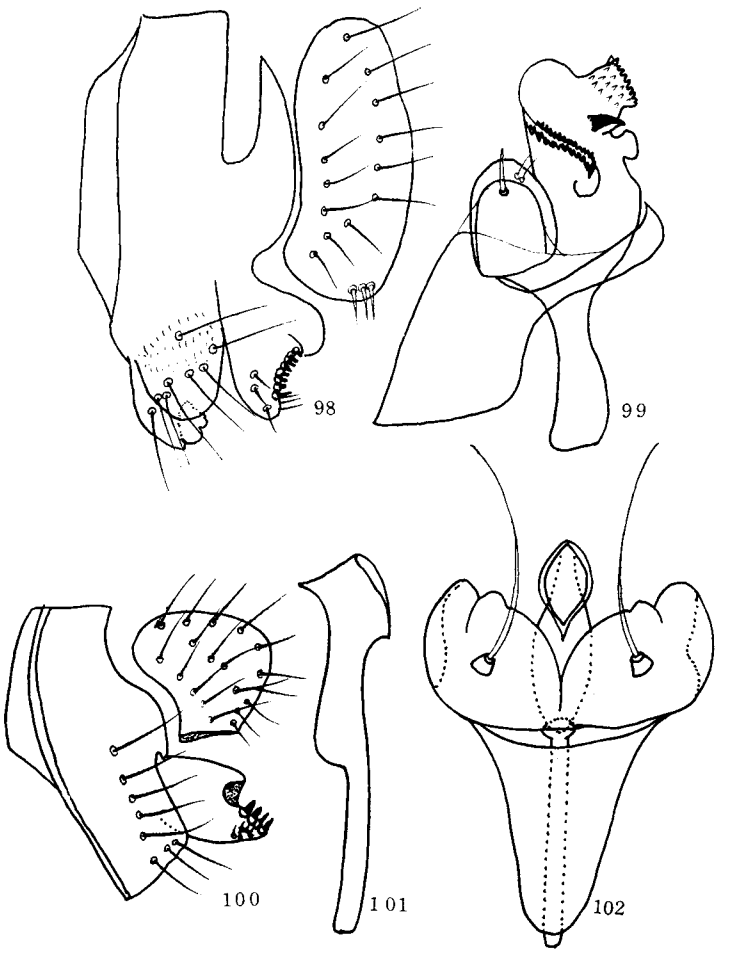
The ***nasuta*** subgroup Wilson *et al.*

Drosophila sulfurigaster Duda

Drosophila sulfurigaster Duda, 1923, Ann. Mus. Nat. Hung. 20: 48 (New Guinea).
D. sulfurigaster albostrigata Wheeler, 1969, Univ. Texas Publ. 6918: 217.

Specimens examined, 2 males, Gombak, near Kuala Lumpur, West Malaysia, July 3, 1972 (Takada).

Distribution: Philippines, Borneo, Cambodia, Thailand and West Malaysia.



Figs. 98–99, *Drosophila nigrilineata* Angus. 98, periphallic organs; 99, phallic organs in lateral views. Figs. 100–102, *Drosophila cheongi* n. sp. 100, periphallic organs; 101, aedeagus in lateral view; 102, phallic organs in ventral aspect.

The ***lineosa*** subgroup Wilson *et al.*

Drosophila argentostriata Bock

Drosophila argentostriata Bock, 1966, Univ. Queensland Papers, Zool., 2, 14: 273 (New Guinea).

Specimens examined, 3 males in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 4, 1972 (Momma).

Distribution: New Guinea, Borneo and West Malaysia (new record).

Drosophila silvistriata Bock & Baimai

Drosophila silvistriata Bock & Baimai, 1967, Univ. Queensland Papers, Zool., 3, 2: 19 (New Guinea).

Specimen examined, one male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, July 4, 1972 (Momma).

Distribution: New Guinea and West Malaysia (new record).

"questionable" subgroup

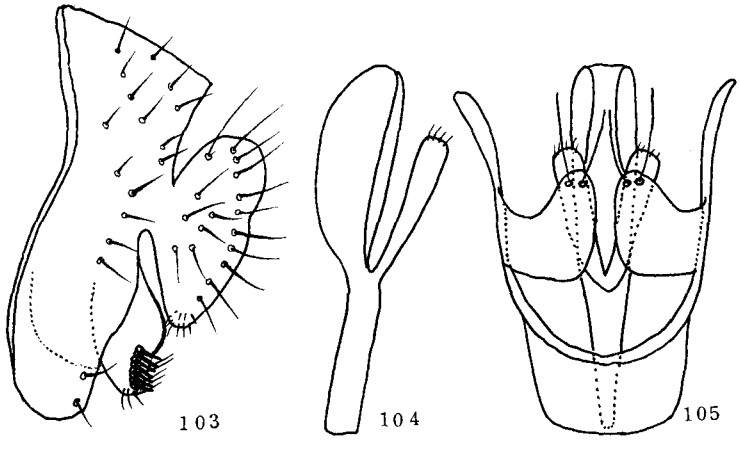
Drosophila* (*Drosophila*) *cheongi Takada & Momma, **n. sp.**

(Text-figs. 100–102)

Male. Body 3.0 mm, wings 2.8 mm in length. Arista with 9 long branches above, 3 below, besides a terminal fork. Third joint of antennae longer, pale brown. Orbital bristles in the ratio 3:2:4, anterior reclinate orbital placed anterior to the proclinate orbital. Ocellar triangle convex. Front dark brown. Cheeks dark brown, with many stout bristles, broad, about 1/4 as broad as the greatest diameter of the eye. Vibrissal rows well developed, first and second subequal in size. Palpi crescent, large, with several stout setae. Mouthparts well chitinized.

Mesonotum dark brown; acrostichal hairs in 8 irregular rows, prescutellars present. Ratio anterior and posterior dorsocentrals 0.8. Anterior scutellars divergent. Halters white. All femora and tibiae dark brown; all tarsi yellow; fore femur with a row of long bristles on posterior surface. Abdominal tergites yellow, with broad dark brown bands, abdominal areas of 2T to 5T yellow.

Wings golden tint; C-index about 2.0; 4V-index about 1.5; 4C-index about



Figs. 103–105, *Drosophila tetravittata* n. sp. 103, periphallic organs; 104, phallic organs in lateral view; 105, phallic organs in ventral aspect.

1.1; 5-index about 1.2; Ac-index about 2.8; C3 fringe covered entire length. Phallosomal index about 2.0.

Holotype, male in alcoholized, Gombak, near Kuala Lumpur, West Malaysia, Dec. 18, 1972 (Momma).

Distribution: West Malaysia.

The new species is named in honour of Dr. Weng Hooi Cheong, Department of of Entomology, Institute for Medical Research, Malaysia.